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ABSTRACT

This document contains three papers from a symposium on human resource development (HRD) and performance outcomes. "Going to the Next Level of Growth: Employing Systems Thinking to Make Effective Interventions" (Carol Ann Zulauf, Joseph A. Ilacqua) shows how a systems view enables organizations to find the most effective point for interventions and results in long-term fundamental change. "Independent Quality Assessment of HRD Projects" (Martin Mulder) tests the reliability of a program evaluation model that ranks organizations in terms of aggregated impact of HRD projects. In "The Relationship between Managers' Reported Use of Corporately-Developed Training and Performance Indicators for Branch Offices of a Car Rental Firm" (Catherine M. Sleezer, Judith Hixon, Kenton Green, Jane Mudgett), comparison of 15 high and 15 low performing offices showed that managers of high performing offices used hands-on training significantly more often. (KC)

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17 HRD and Performance Outcomes

Chair: Richard J. Torraco, University of Nebraska

Special Report: Outcomes of the Performance in HRD Pre-conference
Richard J. Torraco, University of Nebraska, ISPI/AHRD Research Grant Award Recipient

Going to the Next Level of Growth: Employing Systems Thinking to Make Effective Interventions
Carol Ann Zulauf, Suffolk University
Joseph A. Ilacqua, Bryant College

Independent Quality Assessment of HRD Projects
Martin Mulder, University of Twente

The Relationship Between Managers' Reported Use of Corporately-Developed Training and Performance Indicators for Branch Offices of a Car Rental Firm
Catherine M. Sleezer, Oklahoma State University
Judith Hixon, Oklahoma State University
Kenton Green, Oklahoma State University
Jane Mudgett, Snappy Car Rental Co, AHRD Global 100 member

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Going to the Next Level of Growth: Employing Systems Thinking to Make Effective Interventions

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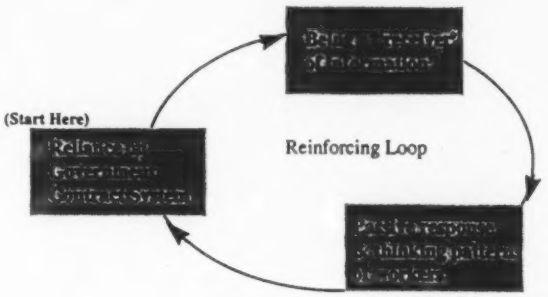
Every organization is faced with issues or problems that need to be addressed. Analyzing those problems has always been one common way of addressing those problems. The changes and challenges that have been encountered by the organization presented in this paper have been looked at through a systems thinking perspective. By looking at any problem from a systems view provides us with the opportunity to find the most effective point for intervention. Addressing problems this way will result in long-term, fundamental change, and that is just one of the results from the research presented here.

What would you do if your company were on the brink of extinction? There is no right or wrong answer to this question. However, when we look at any problem that we are facing in our organizations, one of the first steps we should take is to look at our problem from a systems thinking perspective. Systems thinking allows us to view the whole of the situation. It looks at the "what influences what" dynamics of the issue at hand. One of the key benefits of framing a problem from a systems perspective is that it provides us with the opportunity to find the most effective point for intervention. Our story that we will be illustrating looks at a company, Mycomm Corporation* in Massachusetts, that was predominately reliant on defense-related contracts for most of its history. During the 1980s, there were many changes going on with the cutting back of contracts. Because of those cutbacks, it was now incumbent on many companies, and Mycomm in particular for this business story, to restrategize in order to remain alive. If we were to look at the dynamics of the system at that time during defense-related contract work, it would look like this:

Dynamics of Organizational System Under Defense-Related Contract Work



This systems diagram should be read as follows: The reliance on Government Contract System influences being just a "receiver of information." In the words of the CEO/President, "just doing what you are told." This then influences a passive response and thinking patterns of the workers, which then feeds back to their reliance on government contracts.
*All names have been changed.

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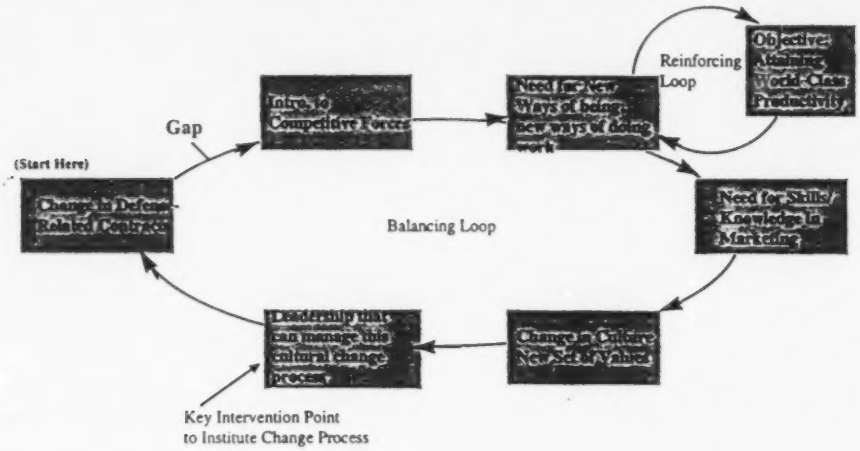
In this paper, we will have the opportunity to explore the decisions that were made and the dramatic results that ensued through the keen guidance and leadership of the CEO of this particular organization. This organization is not only financially thriving but its employees are enjoying the benefits of this transformation through empowered decision making, expanded educational opportunities, and enhanced quality of life issues. This paper captures the journey of this successful organization. It focuses on the dynamic changes in company culture and the philosophy that fosters continuous learning and growth.

The overall theoretical framework of systems thinking will be used to aid decision makers and HRD practitioners in understanding the dynamics inherent in any system in order to make an intervention that promotes positive growth for all in the organization. The point of intervention can be depicted in the following systems diagram. This second illustration shows the transitional phase of Mycomm as they begin to make their withdrawal from relying on defense-related work to being more market-driven.

Transitional Time - Becoming More Market Driven and Competitive



To read this systems diagram, start with the Change in Defense-Related Contracts. There is a gap between the reliance on defense-related work to needing to make the transition to competitive market forces. The introduction to competitive market forces influences a need for new ways of being and new ways of doing work. There is a sub-loop here to indicate that there is a corporate objective of needing to specifically focus on attaining world-class productivity as the way of refocusing work and tasks. To continue with the main loop, the new ways of doing things spawns a need for new skills and knowledge, especially in marketing. The emphasis on new skills and knowledge points to a larger issue of changing the culture and inculcating a new set of values. This change in culture and values points to the need for leadership that can manage this whole process. This loop continues ad infinitum, seeking equilibrium; hence, the "balancing" loop.

Research Question

How do we increase the performance of this organization and our employees to the next level of sharpness and discipline? This was the question that the CEO posed at the end of our first investigation last year, in 1995, and the one we focused on going into our expanded case study commencing in the Summer of 1996.

Methodology

The undertaking and reporting of this research is going to be viewed as being slightly different from the norm of categorizing something as quantitative or qualitative. In the spirit of the philosophy of organizational learning we will be presenting a story, the story of how a company's life and changes unfold. In this way, we have a synthesis of what happens, of what transpires. Our traditional way of thinking is to analyze and to break things apart. By synthesizing, by seeing the whole of something, we are able to begin to understand the underlying dynamics of a situation in order to make the most effective intervention for the highest leverage in instituting change (Senge, 1990).

The researchers interviewed the President and CEO of Mycomm Corporation in Sturbridge, Massachusetts, and his key top managers in the four business segments comprising Mycomm's core technologies and markets in 1995 and again in 1996 using structured interview questions. Evaluating the documentation of this company, collected from company records and from business literature, provides additional insight and information. The chronicles of this firm will be used to present the findings.

This research explores the underlying dynamics in growing an organization and its people. It provides us a glimpse into how a leader thinks and the impact such beliefs have on an organization, the cultural changes that needed to take place, and the underlying philosophy of the organization that embraces learning at all levels.

The Story of Mycomm: The Real Work Involved

The shift from relying on defense dollars to market-based forces has created an emphasis on the underlying dynamic that can make this fundamental change possible. That dynamic is the skills, abilities, and thinking processes of the workers. As the President and CEO of Mycomm Corporation, Mr. Tom Sweeney, put it, "People didn't know how to think [when immersed in the government contract system]." This part of the evolving story will focus on people—from the vision of the CEO to the front-line worker and what is needed to make that transition. As Mr. Sweeney observed, "They don't relate to it...they don't know what it means at first." But, notice Mr. Sweeney's operative word here—"first." Here is an open door, a window into a new possibility. The beginning point is realizing that "we're looking at re-culturalizing here...changing something to that extent...there is absolutely no substitute for time." Mr. Sweeney postulates that with this kind of change you're looking at something taking five to ten years. Such change is an educational process, a step-by-step evolution that people have to go through that is very, very difficult.

Describing that Change Process To share with you the process as experienced and lived by Mr. Tom Sweeney is the best way to present this. As he shared with us: When you set out to change a culture, you have to give people something to focus on. We started with laying out for people a value set, a set of values that would define what our culture would be at the end of the trail, if you will. That set of values is defined as the Mycomm philosophy; it's in every annual report; it's out in the front lobby; it's in every manager's office. You start with 'This is the way I want to behave when I grow up.' That's the culture I want in my company then at the end of the day. Then comes the creation of the business strategy, all the numbers and details, and everything that would have to go around that. Then the constant leadership change education of the organization, leading by example, instilling new ways of approaching things and new thought processes in people. Then you get to the point of formalizing that process, bringing in outside consultants, starting the re-engineering process, and starting personal development programs.

Exceeding That First Objective Laying this foundation has started to pay off handsomely. One very specific objective that was set was to get the world-class level of productivity needed to compete in commercial markets. According to Sweeney, "We can't compete in commercial markets with military productivity; we just can't do it." We can see a snapshot of some of

Mycomm's financial results from defense conversion in their sales per employee in 1995: $195K as a market-driven organization; $40K as a military contractor. Mycomm had to create new technologies from scratch. Their military technologies did not work in commercial markets. But, it is starting to pay off again as measured by another business indicator, the drop in revenue from military sales. Annualized military sales in 1987: $25 million; in 1995: $1.7 million. Sales of $34,043,000 were up 13 percent from the previous fiscal year and earnings per share of $0.17 reversed their year earlier loss of $0.17 per share. Over $30 million of this revenue base is generated from brand new "start-from-scratch" products; the balance being generated from the original military technology.

Mycomm's strategy involves a creative fusion of the firm's core skills and technologies. As stated by Pages (1993, p. 35) Mycomm would try to develop commercial applications for the valuable technologies it possessed, such as its successful move toward creating remote sensors for use in manufacturing. In addition, in areas where Mycomm lacked valuable technologies, it would exploit core skills. Determined to serve new customers with those skills rather than new technologies, Mycomm deliberately moved into the office products and medical markets. All of Mycomm's key profit generators are made from one common material: glass. Everything they make is from glass. As Sweeney explained, "It is used in totally different ways, in totally different markets, using totally different processes for the most part....but we've tried to take what I call a universal skill set..."

With this emphasis on core competency and their core businesses comes the next generation of technology in anticipation of market needs. Another key to Mycomm's thinking and strategy is to look for the best way to solve the customer's problem rather than selling them something they make.

Fuzzy Concepts That Have Worked When you are transforming an organization, a lot is involved and a lot is at stake. Transformation doesn't happen by itself. Change and transformation need that exogenous push. That "push," or foresight should come from the leader. Mr. Sweeney believes that you really have to be an extraordinary leader and manager to survive. There is a complimentary, yet creative, tension between the two concepts of leader and manager. According to Sweeney:

> The way you measure successful managers and leaders is that they're not overwhelmed at this hectic pace; that things really do run well in their organization with or without them; and they're highly visible as leaders and almost invisible as managers...

And just how does one make that transformation? What key business and economic indicators does one reference? Well, picture being back in 1984 and nobody is getting out of the military business. You are Mr. Sweeney and he is telling the Board of Directors of Mycomm that they should get out of the military business. What? But, wait ... it gets more intriguing. Mr. Sweeney proposes that in order to get out of the military business, you have to get into it first in order to get back out. He proposed that they needed to immerse themselves in the military business to make as much as they could, gain a strong financial base, while simultaneously building their commercial business. That strategy definitely paid off. Even though one of the Directors said that they had a forecast from the government saying that the military business is going to do "this," Mr. Sweeney said, "Well, we think it is going to do "this." The board then asked, "What makes you think that this is what's going to happen to the military business?" Mr. Sweeney's reply, "My gut, that's all. I have no numbers; I have no explanation. I'm just telling you it's my gut." As he continued, "I try and coach people - trust yourself, trust your gut."

In Retrospect Mycomm's heavy dependence on defense contracts, in the face of talk of defense spending cut backs, lead to attempts to diversify in the late 1960s and once more in the mid-1970s. Both attempts have to be labeled as failures. It was the mid-1980s when Sweeney, recently on board as president, initiated the third, and final, successful move away from defense contracts and toward competitive markets.

In 1995 as Mr. Sweeney looked back on the conversion process, on changing a culture, on having gone through the process, he shared some key insights as to what was paramount in this process. "Education, education, education, education—as soon as possible in the process is critical." A major portion of that education is just how you look at things, how you solve problems, and what's fundamental about the technology. As Mr. Sweeney continued, "It's this

examination and self-assessment, whether you call it a skills inventory [or whatever]; it's being very introspective."

However, as the account of Mycomm unfolds as an odyssey of dynamic organizational change, the use of the term "education" takes on both an interesting and puzzling meaning. A look at the dynamics of the process a year later gives the statement "... education—as soon as possible ..." a different contour. A year later Sweeney seemed to be at the realization that education and training were successful interventions only at the right point in the dynamics of a changing organizational culture.

At that point Mycomm has attained accomplishment and success in their quest for market driven development and growth. According to the President, they had reached their "next level of sharpness and discipline." Now the question became, How does one define that level of sharpness and discipline and nurture it?

The Next Level of Sharpness, Discipline and Growth

Mycomm's odyssey has taken it from the brink of extinction to resilience. When asked what change the new organizational culture had brought about, Karl S. Nysmith, Director of Manufacturing, answered quickly. "We have brought in a future when we didn't have one. That is a real achievement."

When we look at Mycomm with the guidance of its president and the top management team, we see a changed organizational culture and philosophy that was started, as Sweeney points out, at the shop floor and then extended to management. It was an evolution that was often painful and one that many managers couldn't make. At Mycomm and other firms in transition, organizational change was often more easily made in the shop than in the executive suites, but in the end it worked.

The biggest change at Mycomm was seen in the response to production challenges. In the past the issue often was an explanation of why an order could not be completed on time. In the new environment the spirit is, "if we can get the order, they will be able to do the work and do it on time. It will be done to the best quality." From the shop floor to the boardroom everyone knows the financial numbers and the metrics--that information is always available. Everyone knows they have a stake in how well Mycomm does, and that they will be recognized and rewarded for their contribution. That has created the new "can do" perspective of work. Out of the process of change has come a new sharp team-based management structure that works through a well-disciplined, yet dynamic process. The goals of the company's efforts are always stressed, yet a lot of freedom is allowed. There is an insistence on accountability, combined with a liberal recognition and reward system based on people's resourcefulness. The bottom line is of final importance, but at all times a sense of humor is expected.

The practice is rooted in the leadership style of top management. Don V. Goldin, a Vice President and General Manager of Remote Sensor Products, made this clear:

> None of us are micro-managers. An important part of the Mycomm environment is the acceptance of a variance of views and ideas. There is a lot of freedom allowed in getting things done. We make a point of recognizing and rewarding resourcefulness, even when people go off on a different track.

This story illustrates his point. In the past, Mycomm had never been able to successfully produce a 60-degree scope, but two people on their own time went off in their own direction and solved the problem of making one. This was way out of line with their current assignment and more related to the company's history than its future. However, at the new Mycomm, they were not scolded for working outside their bounds; they were praised at a meeting and rewarded for their creativity.

Here we have a case of an old agenda meeting the new level of sharpness and discipline. Having reached the new level meant that the previously unattainable now was in reach. In this new environment, the people on teams are not working to carry out the tasks on the manager's lists, they are doing what is important to them--what they want to see accomplished. At this point it was important to the two workers to use their new level of sharpness to find a solution that was beyond

their reach in the past. With the right intervention at the right point, good leadership can foster a synergism between what is important to creative employees and the vision of the organization.

At the next level of organizational dynamics, teams have brought new meaning to quality manufacturing. In the past, the debate was often about what percentage of production would be returned because of defects. Five Percent, ten percent, were seen as standard and accepted. Now defects and returns are just not accepted as normal. Under the teams, the expectation is that there will be no returns for quality reasons. The teams feel they have a stake in it. Today only high quality and on-time delivery are accepted as the norm. This is part of the new environment, which extends from the top, down to the shop floor. Everyone who has stayed with the company has accepted the team spirit. They believe in the mission statement.

Yet sharpness is not always easy. As Tom Sweeney sees it "Pain is inevitable in life; suffering is optional. Suffering is what we create in our minds." Sometimes people are confused about the team environment. It is not all friendly, buddy like. The team can be very competitive, very driven, and intense. People are working together for a goal and their success goes right to the bottom line. They know their reward is going to depend on what the team adds to the bottom line. There was a fear in the beginning that now that you are asking people to take responsibility, they will be punished for their errors. First, you tell them to make the decisions, then you punish them for those decisions.

However, that is not the way it is. Errors are accepted as inevitable in this dynamic environment. There is a high tolerance for risk taking at Mycomm. One general manager came from a company where he said, "It was the safest to do nothing. In a big company like that you can get fired for doing something, but never for doing nothing. Here doing something and taking risks is the norm."

Successes are rewarded. Giving people responsibility is a whole system: they make decisions in a supportive environment, get rewarded accordingly. Team members can ask questions, take lead roles, get the training they need to do what is expected of them.

The fast-paced timing is a very important change and people understand that. With the Mycomm reward system, team members understand the importance of time. If a team can get a new product line that is going to yield $50,000 profit a month on-line two months early, the team members will share in that profit. Everyone has the incentive to see that it happens.

There is a lot of peer pressure to be motivated, to do the best that can be done. Motivation by the teams is very profit orientated. People know their performance and reward is tied to the bottom line. Bottom line improvements are shared but everyone knows "there is no free lunch."

Although there is team pressure, there is another aspect. At Mycomm it is seen as all a kind of fun. The teams are inventive. The leadership wants workers who want to be in the action of the team environment which is motivating to them. Feedback on how your team is doing is seen as very important in this environment and there is a lot of it. Everything and everyone is very open.

Although metric growth is approached with caution at Mycomm, the bottom line is seen as much more important than sales, new levels of growth are important to the teams. There is structure and boundaries and goals, new ideas quickly move forward. The rewarding of good work cannot be overstated as an important element here. Risk taking is accepted and expected. Making errors while trying is accepted. When you do well and contribute to the company's success, you know you will be rewarded. Rewarding is part of leadership.

Leadership as The Effective Point of Intervention

"Leadership is creating a new environment." That is what leadership has meant at Mycomm. Tom Sweeney's leadership style has never been static as he is the catalyst for a new and evolutionary organizational environment. Mr. Sweeney's philosophy is that "the leader can change dramatically the entire way something performs...he or she generally does not do it with a lot of fanfare...you don't find huge change taking place and groups of people running around in a frenzy. There is just this deliberate march towards better that starts to happen." The fundamental key to igniting this

change begins with implanting a value system that people can identify with. To quote Mr. Sweeney, "It's the culture that really provides the guidance to get you through what's going to happen and it's the beliefs that get you through that." Mr. Sweeney is very quick to point out, however, that creating the culture is the beginning point. One also needs managers and leaders that are synergistic with that new culture. Having very good leadership at all levels of the organization is also critical.

The top management team gives their president high credit for the cultural change at Mycomm. "Tom Sweeney really did things right in creating a new environment." The struggle, and it was a real struggle at first, was started when the company was on the brink of extinction, so it was taken seriously. Outside expertise was brought in, who knew what they were doing. This made it clear this was not the fad of the week, that the new environment was going to be there for a long while. " Once it was in place, we have stuck with the new Mycomm environment. This has meant that its acceptance has been complete. You can really see a growth in the role of the employees coming from the leadership and the empowered team environment."

However, the convergence of the concepts of leadership and an effective point of intervention necessitates changes in leadership style as a dynamic organization evolves. At the core of the new Mycomm work environment, the team's effort is crucial. Freedom, flexibility, responsibility, a high degree of diversity, an acceptance of and the importance of individual's ideas, all must be there. On the other hand, especially in the start up of a new project, the culture says that there is no room or time for consensus building and that leadership and team empowerment often must involve benevolent dictatorship. As one manager put it:

> You must make the decision as to what goals must be done and the team is empowered to do it. You may not wait to develop a consensus, but you explain why you are doing something. In an empowered environment, the team accepts and understands the goals and their importance. There are different aspects to leadership, depending on the need and the circumstance.

Learning and Education Throughout the Organization

In manufacturing and all other departments of Mycomm the greatest change has be in the competency of the people. With that competency has come the confidence they have in their own competency. Top management puts learning in this perspective:

> We are spending two times as much on education and training as we did in the past. We give them the chance to learn what they have to know to do better and they take advantage of it. We have created an environment that insists on success and progress. That's what we all expect and what the people who come to work for us want. We have developed an environment where people are paying attention to advancing their careers. We give them a great many opportunities to learn, and train, and advance themselves. They take advantage of this.

At Mycomm they are not concerned about people taking the training, developing new skills and then taking them to a new job. If that happens, that is okay. The strategy is to give them the skill and competencies, but also give them an environment where they want to stay. That environment keeps them at Mycomm, even as their ability improves. Education and training are seen as part of a total package. The feeling is that the best people will look at the whole thing and take advantage of it all--that seems to be getting the results the company needs. Employees see themselves as working hard, but they feel comfortable going to work, taking responsibility, and using their competencies. Learning and using that new knowledge has become a matter of being part of the company. It was only within the last year that a high-geared drive for company-wide education was started. Over the years of transition, a learning culture developed until a point was reached where education could be emphasized. In Tom Sweeney's words "You can't teach brain surgery to sixth graders. You have to prepare people to get to the point where they recognize education as important to them." Today, every employee must have at least a GED and each one must complete at least one training program a year. When the new education program was announced, people lined up at the door of Human Resources. Sweeney feels that if those rules

were announced five years ago, "A lot of people would have been looking for jobs, because they just knew they were going to be fired."

Results and Conclusions

Managing a dynamic environment will require leadership that understands the changes needed at critical points of development of the organization. Developing this competency in our HRD practitioners as well as other key leaders in organizations is one primary learning that can be harnessed by the results of this research.

The crucial goal of the new learning programs at this organization will be the fostering of the mindset, internal drive, and self-direction needed to complement and promote corporate cultural change.

How this research contributes to new knowledge in HRD

The business story presented here delineates a company "breaking down the walls," of functionality by assiduously building cross-functional teams that are successful, productive, and creative. It also illustrates how the cornerstone discipline of organizational learning, systems thinking, can be utilized and applied in organizations. The research in HRD delineates the need to continue to link HRD to business results. The time is right for HRD professionals to continue the process of improving human performance within organizations by employing a systems thinking perspective. By doing so, an understanding of the whole system in question is looked at from the perspective of elevating the performance of that system to the next level of potential. Where our field of HRD is about tapping into everyone's potential for the benefit of all, this business story is a contribution to that purpose.

The theoretical implications from this research is two-fold. One, employing systems thinking can be applied to any field of research. It elevates our thinking from the events level to seeing the underlying structures inherent in any given situation. It is a process-oriented shift that does require time to develop. Herein lies the challenge for all of us as researchers and practitioners and it also represents the second theoretical implication: in our fast-paced organizations, will we be able to develop a change in our thinking patterns that ultimately will allow us to shift to a more effective, long-term, and systemic perspective?

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Independent Quality Assessment of HRD Projects

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An Independent Quality Assessment method has been developed to evaluate the quality of HRD projects conducted by HRD organizations. The member organizations receive reports with the evaluation results. The results are presented in such a way that organizations can compare their performance with the average performance of the group. Organizations were ranked on the total satisfaction indicator. The ranking position of organizations based on this variable varied considerably over time. A more comprehensive and valid indicator is developed: the aggregated impact indicator. Organizations are ranked according to this new indicator. The relationship between both ranking methods is strong and statistically significant. This means that the varying positions of the organizations in the ranking reflects temporary variations in the quality of the HRD projects.

As has been published extensively before (Mulder, 1996a; 1996b, 1996c; Mulder & Van Ginkel, 1995; Mulder, Van Ginkel & Nijhof, 1994), an Independent Quality Assessment method has been developed by researchers of the Faculty of Educational Science and Technology of the University of Twente in the Netherlands, to evaluate the quality of HRD projects conducted by HRD organizations. Within the framework of this paper it is difficult to give a full description of the method. To summarise it: the method used consists of drawing a random sample of HRD projects conducted by about 40 HRD organizations.

The method is standardized. Customized evaluation is conducted by the HRD organizations and the clients organizations themselves most of the times. A standardized method is used because of budget constraints and comparibility of the data. There are three categories of projects that are evaluated: group based HRD programs (e.g. management, communications and sales training programs), individual HRD programs (e.g. language training, personal coaching), and HRD program design and development (e.g. course design, instructional materials development, documentation production). The HRD organizations are independent companies. Most of them are competitors in the market. They provide HRD services that are being outsourced by companies and institutions. They are members of an association of HRD organizations. Together they conduct joint marketing.

The clients of these projects receive a structured questionnaire in which they assess the quality of the HRD project. The respondents, in most cases, are the contractors of the HRD organizations. Furthermore, they form the liaisons between the HRD organization and the HRD project team in the client organization. In many cases they are also the project managers of the HRD project on behalf of the client organization. They are best informed about the strategic or tactic objectives behind the HRD project, and about the short and long term impact of the project at job performance and organizational level. Responding clients are partly staff officers (such as training managers or personnel managers), partly line managers (such as managers of divisions, business units, and project teams). Until now, this difference did not create problems in answering the questions about the projects.

The HRD organizations, the member organizations of the association, receive reports with the evaluation results. The results are presented in such a way that organizations can compare their performance with the average performance of the group. Part of the IQA method is

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a procedure to handle problems and complaints. When respondents are dissatisfied with the performance of the HRD organizations or when the project implementation created problems, the researchers inform the HRD organization concerned (under the condition that the respondent appreciates this, which is asked in the questionnaire). The researchers check whether complaints and problems are being handled by the HRD organization. If not, the board of the association may be informed. This, however has not happened yet, because of problems and complaints were forwarded to the HRD organizations, the follow-up by these organizations has always been appropriate.

Clients do not receive feedback from the researchers about the performance of the HRD organizations. If they want, they can request a copy of the report from the HRD organization. If they would order all reports from all different HRD organizations, they could compare the ranking. Despite the fact that the clients do not get immediate feedback from the quality assessments, the majority of them cooperates voluntarily in the study. Thsi can be explained by the fact that many of the clients have good relationships with the HRD organizations, and that HRD organizations inform their clients about the IQA method.

Organizations were ranked on the total satisfaction indicator. The ranking position of organizations based on this variable varied considerably over time. A more comprehensive and valid indicator is developed: the aggregated impact indicator. Organizations are ranked according to this new indicator. The relationship between both ranking methods is strong and statistically significant. This means that the varying positions of the organizations in the ranking reflects temporary variations in the quality of the HRD projects.

The method is based on a conceptual framework that can be described in terms of a systems approach in HRD, effectiveness evaluation of HRD projects (Binkerhoff, 1987; Bramley, 1991; Basarab & Root, 1992; Hamblin, 1974; May, Noore & Zammit, 1987; Phillips, 1991), and marketing of HRD services (Gilley & Eggland, 1994, Brinkerhoff & Gill, 1994). Within the systems approach HRD is conceptualized as a field of expertise to solve human competence problems in organizational contexts. It contributes to the effectiveness of human performance in professional practice, and it results in added value for the organization. (Swanson, 1994). As to the systems approach of HRD, three main stages of activities of which HRD projects consist can be distinguished: the before-during-after the intervention stages. The stages are often referred to as the front end analysis and development stage, the implementation stage, and the evaluation stage. Effectiveness evaluation results in information which is needed to give input to the decision making on the implementation of the further HRD projects or other non-HRD projects. As to the effectiveness evaluation of HRD projects four levels of results are distinguished (Kirkpatrick, 1994: reactions of the participants, learning results, changed work behavior, and benefits for the organization.

The IQA method has been used since 1993. Non-response, test-retest, and inter-rater reliability research is concucted, as well a correlational studies and Lisrel analyses have been performed.

Data

The IQA method is developed in 1993. Since 1994, four measurements took place. Each time, one half year during which HRD projects were completed, samples were drawn from the file of completed projects. The half year from which projects were selected was the second half of 1993 (this is abbreviated as 93-2).

In Table 1 the measurement periods, the means of the total satisfaction (on a 10-point scale; 1 = minimum, 10 = maximum) on the HRD projects studied, the total standard deviations of the scores on the total satisfaction indicator (TSI), and the number of HRD projects studied, are indicated. In total 1999 projects were evaluated. And the mean satisfaction across all measurements is 7.7. The differences over time have been tested by an analysis of variances test, which showed no significant differences (F=2.48; P=.06). But even if the test would have shown these differences were statistically significant, the conceptual meaning of the differences would

be meaningless. So we remain with our observation that the TSI is a stable indicator which is homogeneous over the years.

Table 1 Means, standard deviations and number of cases (evaluated projects) for the total satisfaction indicator by measurement period.

Measurement period	Mean	Standard Deviation	Cases
93-2	7.57	1.08	347
94-1	7.76	1.17	499
94-2	7.73	1.15	518
95-2	7.77	1.15	635
Total	7.72	1.14	1999

Projects have different objectives. Based on the evaluation methodology, three categories of projects are distinguished: projects aimed at achieving (i) learning results, (ii) changed job performance, and (iii) changed organizational performance. Over time, the results on these objectives differ somewhat more than the differences on total satisfaction (see Table 2). And the results differ for the categories of projects. The more the objectives are education oriented, the higher the effectiveness, the more the objectives are organizational oriented, the lower the effectiveness.

Table 2 Means, standard deviations, F-values and P-values for scores on achieving learning results, changed work behavior, and organizational by measurement period.

Measurement period	Learning results		Work Behavior		Organizational Change	
	Mean	Sd	Mean	Sd	Mean	Sd
93-2	3.61	.79	3.15	.85	2.85	1.04
94-1	3.79	.79	3.30	.85	3.03	1.09
94-2	3.84	.88	3.41	.94	3.19	1.10
95-2	3.80	.83	3.30	.94	3.11	1.04
Total	3.78	.83	3.30	.91	3.05	1.07
F	4.83		3.81		3.63	
P	0.00		0.01		0.01	

The differences in results between the total satisfation indicator and the results indicators are considerable, and therefore both needed.

Research Questions

Until now HRD organizations were ranked according to their mean score on the TSI. This ranking of HRD organizations over time is very dynamic. One could contend that this is an effect of the range of the observations, and as a consequence of this that the ranking suffers from regression-to-the-means effects. There indeed is a limited range in the scores on the TSI. Over all

1999 cases in the consolidated dataset, there are only 3,7% scores less than 6. On the other hand, non-response research indicated that the differences between respondents and non-respondents as to the TSI values are very small. It should be noted however that this analysis has been done at the association level, and that it needs to be replicated at the HRD organization level to be decisive in this respect. This however can easily be done in the future. For a certain number of HRD organizations it can be checked whether their non-respondents judgements are systematically different. Until now we assume that the dynamics in the ranking on TSI are a reflection of the perceived quality of the HRD projects. To make the ranking more useful, as of 94-2 the longitudinal mean was used for ranking, but the separate data for 93-2 and 94-2 were also given. Each HRD organization received an overview with their name printed before the line with the data of the organization. The other data were anonymous. In this way the organization could see its own position in the whole association, but it could not see the individual position of the other organization.

The use of the IQA method as described here indicates that the variables that indicate aspects of the quality of the HRD programs are treated separately. This result in a fragmented quality picture of the HRD programs together. Further research needs to be oriented towards integration of the variables that indicate the results of the HRD programs. The research question is:

How can an aggregated impact indicator (AII) be constructed that is less fragmented and satisfaction oriented than the total satisfaction indicator (TSI)?

The related question is:

Is the variation in ranking of HRD organizations a valid reflection of the variation in the quality of the HRD projects?

Therefore the relationship between the AII and TSI indicators will be tested by computing the nonparametric correlation coefficient. The expected result is that the relationship is statistically significant.

Constructing the Aggregated Impact Indicator (AII)

The AII will be based upon all variables that are included in the questionnaire that reflect the quality of the HRD program. The various variables will be weighed for their importance within the AII. the weight factors are a normative choice, and it is possible that other researches would attach other importance weights to the variables. The following variables are thought of as indicating aspects of HRD project quality: TSI (question 3), Expectation Realization (question 13). Effects in terms of level of achieved learning results (question 14a), changed work behaviour (14b), and organizational support (14c), agreements made (question 16.1), sticking to agreements (16.2) and performance on components of the HRD project (16.3). In constructing AII we now face two problems:

1. the effect variables (14a-c) need to be corrected; and
2. the scales used in the questions differ as the nature of the questions differ.

First of all we will describe the correction of the effect variables, and then we will turn to the differences between the other variables. The results of the HRD programs need to be corrected for the importance of the training objectives given, the responsibility of the training organization for achieving the results, and the attribution of the results to the effort of the training organization. Data on these variables are available, although many respondents stated that they did not make an agreement as to what part of achieving the intended result on the variable 'training organization responsibility' is considerable. Nevertheless we propose to construct a corrected effect variable according to the formula:

$$(1) CE_a = POA_a * IIO_a * RTO_a * ATO_a$$

$$(2) CE_b = POA_b * IIO_b * RTO_b * ATO_b$$

$$(3) CE_c = POA_c * IIO_c * RTO_c * ATO_c$$

$$(4) CE_t = CE_a + CE_b + CE_c$$

a,b,c = projects that are aimed at achieving learning results, changed work behaviour and organizational support respectively

CE = Corrected Effect score

POA = Percentage of intended Objective Achieved

IIO =Importance of Intended Objectives

RTO =Responsibility of Training Organization for achieving the intended objectives

ATO=Attribution of achieving the objectives to the Training Organization

The Aggregated Impact Indicator (AII) can be computed according to the following model:

$$AII = TSI + ER + CE_t + ACT + SA + SPT$$

	Min	Max
TSI = Total Satisfaction Indicator	0	15
ER = Expectation Realization	0	15
CE_t = Corrected total Effect score	0	40
ACT = Agreements made on Components of Training projects	0	10
SA = Sticking to Agreements (keeping promises)	0	10
SPT = Satisfaction on Performance Components of Training programs	0	10

Analysis and Results

First of all overviews were created based on the measurements 93-2, 94-1, 94-2, 95-2. For each measurement the means on the TSI were computed. Next, rank positions of the HRD organizations were determined, based on the means of TSI. Subsequently, the means of the four measurement means were computed, indicated as TSI_{1234}. Then the rank positions of the HRD organizations was determined, based on TSI_{1234}; this rank position is indicated as $R\text{-}TSI_{1234}$.

The following step in the data analysis was the computation of AII, mainly according to the analysis plan. There were some modifications:

- RTO_i (the responsibility of the HRD organizations for achieving the intended objectives) and ATO_i (the attribution of achieving the objectives to the HRD organization) were left out of the computation of the effect size of the HRD project. This means that POA_i (the percentage of objectives that were achieved) was corrected for IIO_i (the importance of the intended objectives), which is only one correction factor. The data do not allow another choice, because

many respondents do not indicate the level of responsibility of HRD organizations to achieve the desired results. They either do not have made agreements on this issue, or they simply do not know the level of responsibility of both partner organizations. About the same is the case for the question on the attribution of achieving the objectives to the HRD organization. Many client organizations do not answer this question.

- A complication was that in 93-2 ER (the expectation of the results) was measured differently (as a dichotomous variable). For the other half years the correlation between ER and TSI was computed. The correlations were high, and therefore for 93-2 the values on TSI were substituted in ER.
- A comparable complication was that SPT (satisfaction on performance on components of the HRD program) was not measured in 93-2; it was added as of 94-1; the same solution was chosen as for ER;
- Some member organizations left the association, and some others came in. The organizations that left the association are deleted from the database, and therefore not taken into account in the computations. Of course there were no data of the organizations that became members in 1994 or 1995. The TSI_{1234} and AII_{1234} scores for these organizations are only based on the 1995 or 1994 and 1995 observations.

Next the rank position of HRD organizations based on AII-scores for the projects was determined.

Then the absolute difference between the mean TSI and the mean AII scores per HRD organizations was computed. The difference would be maximal when the best organization in the TSI ranking would be the worst in the AII ranking, the second best on TSI the second worst on AII, etcetera. This situation by the way, would be dramatic for the feedback given to the organizations as of 93-2. It would imply that the AII indicator would completely reverse the ranking of the organizations. In this situation however, the absolute difference would be 760. Divided by 39 HRD organizations, this would result in a maximal mean difference of 19.5 places. The mean difference in the ranking by TSI and AII however is only 5.8 places. The actual difference thus is much smaller than the maximal difference.

The nonparametric correlation test shows a significant correlation coefficient of .738 ($p = .000$). This underlines the strong relationship between the rankings based on TSI and AII.

Suggestions for Further Research: Testing the Stability of the AII

Now that the AII is constructed, the stability of ranking of HRD organization based on the value of this indicator can be compared with that based on the TSI. As is described before, there are four measurement periods. And the HRD organizations have been ranked based on TSI for there four periods. This can also be done for the AII score. This leads to three different scores for ranking positions, for TSI as well as AII: the difference between 93-2 and 94-1, between 94-1 and 94-2, and between 94-2 and 95-2. The absolute difference scores can be summed, and this is an indicator for ranking instability. The higher the score, the higher the instability. For 45 HRD organizations, the minimum of the score is 0, and the maximum score is 132. The minimum score is applicable when a HRD organization is ranked at exactly the same order over the measurement periods. The maximum score is applicable for instance when a HRD organization is ranked first at the first measurement period, last (45th) during the second (the absolute difference being 44), first during the third, and last again during the fourth period. This result is the maximum difference score of $3 \times 44 = 132$. The difference between the mean ranking instability scores for TSI and AII can be tested by a one-way analysis of variance. The results of this test can be twofold. First at all, AII can indeed appear to be more stable than TSI. In that case we have to conclude that the TSI ranking instability was a research artefact, probably caused by the limited base of this general quality indicator.

Secondly, it may appear that AII is not more stable than TSI. In that case we have to conclude that TSI has been a good indicator for the integrated quality of HRD projects. In that case the ranking instability will probably have been caused by the variability of the quality of the HRD

projects, assuming that it is no consequence of the sampling error discussed before (this can be checked following the procedure described earlier by comparing the quality of HRD projects of non-responding clients with that of responding clients for a certain number of HRD organizations.

This study forms the preparatory step for further and deeper analysis of the reliability of the model that has been constructed to explain the effectiveness of the HRD projects. Now that a more valid constructed quality indicator is available, a new Lisrel analysis may result in a more powerful explanation of the data according to model that has been constructed before (Mulder, 1996b).

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The Relationship Between Managers' Reported Use of Corporately-Developed Training and Performance Indicators for Branch Offices of a Car Rental Firm

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This study which focused on the relationship between branch managers' reported use of training and branch performance compared 15 high and 15 low performing branches. The results showed no significant differences in responses between the two groups on the importance of training. Reported use of hands on training was significantly higher by managers of high performing branches than by managers of low performing branches.

In today's competitive business environment, many organizational decision makers are challenging the fundamental training assumption that learners apply the knowledge and skills acquired during training to their jobs in ways that improve organizational performance. Increasingly, decision makers are demanding training accountability and requiring human resource development (HRD) practitioners to show that training contributes to organizational performance (Phillips, 1994; Swanson & Gradous, 1992).

Literature Review

Many authors have contributed to the body of knowledge about measuring training results. In his classic evaluation model, Kirkpatrick (1957) identified 4 levels of training evaluation: reaction, learning, behavior, and results. Shelton and Alliger (1993) offered guidelines for deciding when to do a results-focused evaluation, and Robinson & Robinson (1991) provided practical advice on how to conduct such an assessment. Swanson & Gradous (1990) contributed the Forecasting Financial Benefits Model complete with fill-in-the-blank forms and examples that show how to calculate the performance values, costs, and benefits expected from HRD efforts. More recently, Phillips (1994) provided a book of case studies that details how practitioners have evaluated training results.

In spite of these and other pragmatic resources, providing decision makers with accurate information about the relationship between training and organizational performance can be challenging for three reasons. First, the organizational managers who are responsible for allocating resources tend to focus on the overall performance of the organization (Lyau & Pucel, 1995). However, measurement and evaluation studies have usually focused on an individual program or a few tightly integrated courses (Phillips,1994). Examples of these studies include Swanson and Sleezer (1989) and Jacobs, Jones, and Neil (1992). Second, training evaluation has often been perfunctory with little analysis (Boverie, Sanchez Mulcahy, and Zondlo, 1994). Third, evaluations have frequently failed to consider the organization's context and culture. To

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address these challenges, systematic evaluation studies are needed that examine the relationship between training and organizational effectiveness (a) within a specific context, (b) for a training program that includes multiple courses and instructional methods and (c) with precise and specified processes used to collect and analyze the data.

Research Methodology

This study was conducted in one organization, a national car rental firm, and focused on the most and least successful branch offices within the firm. The car rental firm was comprised of about 1,000 employees at the corporate headquarters and approximately 190 branch offices. Each branch was responsible for maintaining and renting a fleet of cars. Each served a specific geographical location and was staffed with multiple positions including branch manager, assistant branch manger, sales manager, customer service representative, customer service agent, and service attendant. The employees in branch offices earned financial bonuses based on branch accomplishments relative to specific criteria.

Training, within the context of the car rental firm, was connected to a strategic goal. The firm's decision makers established the goal of marketplace expansion and recognized that accomplishing this goal required developing the firm's human resources. Training was viewed as a tool for achieving the goal and further was a component of the firm's competitive strategy. During the previous year, the firm had invested in improving and updating corporate training for the branch offices.

The updated training program consisted of six modules. Some modules provided practical knowledge and skills for specific positions (e.g., vehicle preparation) and some focused on topics appropriate for multiple positions (e.g., customer service). The training modules included manuals and videos. They also included final examinations for measuring each trainee's knowledge and skills. The corporate human resources department provided each branch office with the training modules and administered the final examinations. Each branch manager was responsible for implementing training. Informal discussion among branch managers at national and regional meetings suggested that they held varied views about the usefulness of the updated training program. Some strongly supported training as a tool for improving current and future performance and some preferred that employees learn the work by doing it on the job.

The research question for the study was: For high and low performing branches, does the branch manager's reported use of training relate to branch performance? Answering the question involved a collaborative effort between the firm's vice president of human resources and a project team. The project team included the instructor and five students who were enrolled in a graduate-level evaluation course at a university proximal to the firm's corporate headquarters.

The research design used to answer the question involved 1) identifying the most and the least successful branch offices, 2) obtaining information about branch managers' reported use of training, and 3) analyzing data about the perceived training use and branch success. The team conducted the investigation in three steps.

The first step was to identify the most and least successful branch offices. An important assessment issue is identifying what to measure or try to measure. As with most complex organizations, the variety of potential performance indicators included hard data (e.g., number of cars rented) and soft data (rate of staff turnover). For this study, the firm's decision makers were responsible for discussing and determining the criteria for identifying the most and least successful branches. The project team used the identified criteria to rank the branches from high to low and to select the 15 highest and the 15 lowest performing branches.

The second step in the process was to obtain information from the branch managers about their perceptions of the training. The project team developed a survey instrument to gather this data via telephone interviews. A pilot test with the firm's training department revealed some needed changes to fit the firm's culture. The final survey contained the following questions: On a scale of 1-5, (a) how important is training for the branch? (b) how much of the training

materials do you use for training new hires? (c) how much of the training manuals do you use? (d) how much of the video modules do you use? and (e) what other methods or materials do you use and to what degree on a scale of 1-5 do you use the materials?

The project team also established a protocol for the interviews. The survey was used to guide the semi-structured interviews with branch managers. To avoid bias, three team members who did not know the branch rankings conducted the one-on-one interviews with branch managers. Telephone surveys were used because of the wide decentralization of branch offices. At the beginning of the interview, the project team member explained the purpose of the interview, the role of the project team, and the confidentiality of individual responses. During the interviews, branch managers were asked to rate their answers to the first four questions using a Likert-type scale of 1-5 with 5 being high and 1 low. For the last question, what other methods or materials do you use, managers provided open-ended responses and then rated the level of use on a scale where 5 was high and 1 was low. Managers were also asked to give input on what they felt worked well with the training materials and what improvements they would like to suggest. As much as possible, the managers' responses were recorded verbatim and shortly after the interview the hand-written notes were transcribed by entering them into a computer.

The third step in the process was to analyze the data. For the first four questions, testing the null hypothesis involved setting the confidence level at 90% and using a 2X4 mixed model ANOVA to analyze the data. The design called for the high performing branches and the low performing branches to be tested as factors in a between subjects design. The fifth question, which asked about the use of other training materials and methods, was analyzed by first grouping the open-ended responses into common categories and then examining the emerged categories by levels of use. The managers' other comments were also grouped for analysis. To provide explanatory information, a synthesis of the open-ended responses was compared to the quantitative findings.

Results

After planning the study, the team began gathering data. The first step involved identifying the most and the least successful branches. The firm provided the project team with data concerning 178 branches that had been in continuous operation for the nine-month period that ended September 30, 1995. The decision makers who participated in this effort included the president, the vice president of human resources, the senior vice president of operations, and three regional vice presidents. The firm's vice president of human resources worked with the other decision makers to select performance indicators.

As a group, the decision makers identified the following as measures of branch performance: Utility percentage, out-of-service percentage, bad debt percentage, revenue per vehicle, profit or loss per vehicle, and profit or loss as a percentage of revenue.

Using this information, the study team ranked the branches from 1 to 178 on each indicator. The positive indicators (e.g., utility percentage, revenue per vehicle, profit or loss per vehicle, and profit or loss as a percentage of revenue) were ranked from highest value to lowest value while the negative indicators (out-of-service percentage and bad debt percentage) were ranked from lowest value to highest value. Thus for all performance indicators, a ranking of 1 represented highest performance and a ranking of 178 represented least performance. The team then ranked the branches from 1 to 178 based on the composite total of the six performance indicator rankings. The 15 branches with the highest composite scores and the 15 with the lowest composite scores were the subjects of this study.

The second step in the study involved identifying branch managers' perceptions of training. Using the one-page survey, evaluation team members contacted the branch managers in both groups. Over a two-day period, 30 nationwide branches were surveyed with responses from 28 branch managers. Survey responses were received from 14 managers in each group.

The third step in the study involved examining the relationship between the branch performance and the managers' perceptions of training as captured by the survey. In all tests, the

high performing group and the low performing group were nested in the two levels of the between subjects factor. Because of the exploratory nature of this study a confidence level of 90% was selected.

The results of the 2 X 4 Mixed Model ANOVA initially appeared to have significant results because the observed F ratio of 8.139 for the training questions (within subjects factor) exceeded the Critical F ratio (0.10, 3, 78) of 2.18 (See Table 1). However, when the F ratios were tested for homogeneity of variance, homogeneity could not be shown to be present. The high value of the observed F ratio does, however, indicate statistically significant differences in the way the different groups answered the first four questions. Comparison of means, variances, and F ratios indicates such a difference might lie in the dissimilarity between attitudes concerning the overall value of training (Question 1) and the value of training materials in use (Questions 3 and 4). Due to difficulties with homogeneity, the responses to the first five survey questions were analyzed using a one-way ANOVA to determine if significant differences existed within the responses to any of the questions.

Table 1. ANOVA

Source	S.S.	df	M.S.	Unadjusted F ratio	Theta Correction
Performance	0.270	1	0.270	0.119	0.119
Subjects/Perf	58.897	26	2.265		
Training	17.971	3	5.990	8.139	8.071
Perf X Train	0.311	3	0.104	0.141	1.397
Train X Subj/Perf	57.406	78	0.736		
Total	134.588	111			

The results of the one-way ANOVAs showed no significant differences between responses of the groups to the first four questions. However, the groups' responses to Question 5, which concerned the use of other training methods, provided additional insight. Two categories emerged from the responses: hands on training and other methods. The category of hands-on training included references to the firm's specific model of structured on-the-job training and other references to hands-on and on-the-job training. Examples of other methods included the use of outside resources and computer tutorials. After reporting the other training methods that were used, the managers rated the use of the other training method on a 1-5 scale. Reported use of hands on training was significantly higher by managers of high performing branches than by managers of low performing branches (see Table 2).

Table 2. One way ANOVA – Question #5 (use of hands-on-training)

Source	S.S	df	M.S.	F Ratio
Performance	3.571	1	3.571	3.523
Subj/Perf	26.357	26	1.014	
Total	29.929	27		

The responses to the question asking for input on what worked well and what could be improved revealed that overall, managers perceived the updated training to be useful and valuable. The suggestions for improvement did not appear to follow a pattern. Examples of these responses included "more time to conduct training" and "a one-week class for all new hires."

The Study's Contribution to Knowledge

This study contributes to new knowledge in HRD because it provides information on the relationship between training and performance. The study revealed no relationship between managers' perceptions of training and branch performance. In this situation, all branch managers highly rated the importance and use of training. However, when managers were asked about other methods that were used for training, two categories of responses emerged: hands-on and other. Reported use of hands on training was significantly higher by managers of high performing branches than by managers of low performing branches.

Sometimes there is nothing so practical as good research (Swanson, 1997). The study showed the benefits of systematically studying a practical situation rather than relying on informal discussions. In this situation, the data provided a different and more useful picture. While the specific results of the study can not be generalized beyond the firm, the study has implications for HRD practitioners who are faced with the multiple views about their training programs. Instead of wondering whether to scrap the updated training program, the vice president of human resources decided to identify specific ways to incorporate more hands-on experiences in branch training. The study also has implications for future research. Because causality cannot be determined from correlation research, additional studies are needed that explore the linkage between hands on training and performance. Also, future researchers should consider measures other than self-reported perceptions of training importance and use. Actual use of training materials may better differentiate high and low performers. Additional research is also needed that explores the perceptions and use of training in different kinds of firms. In today's environment, training is a popular answer regardless of the problem. Moving beyond that answer to systematically study training programs within the context and culture of organizations can be an important step in better linking training and performance.

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